WHAT IS CLAIMED IS:

1. A modulating apparatus for optical communication which modulates a carrier by a modulation signal and generates a modulated wave to be supplied to a light emitting diode, wherein modulation is executed to satisfy:

fd > f1,

fu < f2, and

fd > fu/2

when a lower limit frequency of a use-permitted frequency band is f1[Hz], an upper limit frequency of the use-permitted frequency band is f2[Hz], a lower limit side band of the modulated wave is fd[Hz], and an upper limit side band of the modulated wave is fu[Hz].

2. A modulating apparatus for optical communication which modulates a carrier by a modulation signal and generates a modulated wave to be supplied to a light emitting diode, wherein modulation is executed to satisfy:

fd > f1,

fu < f2, and

fc > 3(1+α) fsr/2

when a lower limit frequency of a use-permitted frequency band is f1[Hz], an upper limit frequency of the use-permitted frequency band is f2[Hz], a carrier frequency is fc[Hz], a rolloff factor is α, and a symbol rate of the modulation signal is fsr.

3. The modulating apparatus according to claim 1, wherein the modulation is executed according to a modulating system including amplitude modulation.

4. A transmitting apparatus comprising:

a modulating apparatus for optical communication which modulates a carrier by a modulation signal and generates a

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modulated wave to be supplied to a light emitting device, wherein modulation is executed to satisfy:

$$fd > f1,$$
$$fu < f2, \text{ and}$$
5         $$fd > fu/2$$

when a lower limit frequency of a use-permitted frequency band is $f1$ [Hz], an upper limit frequency of the use-permitted frequency band is $f2$ [Hz], a lower limit side band of the modulated wave is fd [Hz], and an upper limit side band of the modulated wave

10 is fu [Hz]; and

a light transmitting unit having the light emitting device which is driven by the modulated wave generated by the modulating apparatus and outputs a light-modulated wave.

15   5. A transmitting apparatus comprising:

a modulating apparatus for optical communication which modulates a carrier by a modulation signal and generates a modulated wave to be supplied to a light emitting device, wherein modulation is executed to satisfy:

20         $$fd > f1,$$
$$fu < f2, \text{ and}$$
$$fc > 3(1+\alpha) \, fsr/2$$

when a lower limit frequency of a use-permitted frequency band is $f1$ [Hz], an upper limit frequency of the use-permitted frequency

25 band is $f2$ [Hz], a carrier frequency is fc [Hz], a rolloff factor is α, and a symbol rate of the modulation signal is fsr; and

a light transmitting unit having the light emitting device which is driven by the modulated wave generated by the modulating apparatus and outputs a light-modulated wave.

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        6. A computer program product for making a computer function as a modulating apparatus, by executing the computer program, for optical communication which modulates a carrier by a modulation signal and generates a modulated wave to be

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supplied to a light emitting device wherein modulation is executed to satisfy:

$$fd > f1,$$
$$fu < f2, \text{ and}$$
$$fd > fu/2$$

when a lower limit frequency of a use-permitted frequency band is f1[Hz], an upper limit frequency of the use-permitted frequency band is f2[Hz], a lower limit side band of the modulated wave is fd[Hz], and an upper limit side band of the modulated wave is fu[Hz].

7. A computer program product for making a computer function as a modulating apparatus, by executing the computer program, for optical communication which modulates a carrier by a modulation signal and generates a modulated wave to be supplied to a light emitting device, wherein modulation is executed to satisfy:

$$fd > f1,$$
$$fu < f2, \text{ and}$$
$$fc > 3(1+\alpha) \ fsr/2$$

when a lower limit frequency of a use-permitted frequency band is f1[Hz], an upper limit frequency of the use-permitted frequency band is f2[Hz], a carrier frequency is fc[Hz], a rolloff factor is α, and a symbol rate of the modulated signal is fsr.